ABSTRACT

An immobilized metal affinity chromatography (IMAC) method for separating and/or purifying compounds containing a non-shielded purine or pyrimidine moiety or group such as nucleic acid, presumably through interaction with the abundant aromatic nitrogen atoms in the purine or pyrimidine moiety. The method can also be used to purify compounds containing purine or pyrimidine moieties where the purine and pyrimidine moieties are shielded from interaction with the column matrix from compounds containing a non-shielded purine or pyrimidine moiety or group. Thus, double-stranded plasmid and genomic DNA, which has no low binding affinity can be easily separated from RNA and/or oligonucleotides which bind strongly to metal-charged chelating matrices. IMAC columns clarify plasmid DNA from bacterial alkaline lysates, purify a ribozyme, and remove primers and other contaminants from PCR reactions. The metal ion affinity of yeast RNA decreases in the order: copper (II), nickel (II), zinc (II), and cobalt (II).